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ABSTRACT

Using a subsample of data relating to 4,668 first- and second-graders and their families from the 1991 National Household Education Survey, a study examined different ways of measuring whether a child is behind in grade and compared these measures with data about children who are below modal grade levels. Several profiles emerged. Children delayed in starting kindergarten tended to be non-black boys, born in the second half of the year, who lived in the Midwest, and whose parents had at least a high school education. Children who repeated kindergarten tended to be boys, born in the second half of the year, who lived in the South or West, and who did not attend preschool. Children who repeated first grade tended to be black boys, who did not attend preschool, and who lived in low-income households. Children below modal grade level tended to be those in the above three categories (56 percent) as well as children who had neither delayed entry into school nor repeated kindergarten or first grade (42 percent). The profile that dominates in this case is one of non-black boys, born in the third quarter of the year, who live in the South or Midwest, who did not attend preschool, and who had low household income. (MDM)

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CHARACTERISTICS OF CHILDREN WHO ARE "BEHIND" IN SCHOOL

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CHARACTERISTICS OF CHILDREN WHO ARE "BEHIND" IN SCHOOL

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ABSTRACT

The paper uses data on first and second graders in the 1991 NHES to address four questions:

1) **Who delays entry into kindergarten?** The "profile" that emerges is: non-black boys, born in the second half of the year, who live in the Midwest, were low birth weight babies, and whose parents are at least high school graduates.

2) **Who repeats kindergarten?** Boys, born in the second half of the year, who live in the South or the West, who did not attend preschool, who have a physical or learning disability, who have changed schools one or more times, and whose parents have no college education tend to repeat kindergarten more often than those who do not have these characteristics.

3) **Who repeats first grade?** Boys, who are black, who do not live in the West, who did not attend preschool, who changed schools one or more times, who live with a step-parent, who do not have parents who are college graduates, and who have low household income tend to repeat first grade.

4) **Who is below modal grade?** Because this indicator does not distinguish delayed entry and grade retention, the picture which emerges blurs some of the distinctions noted in the first three profiles. The "profile" that dominates is the following: Non-black boys, born in the third (but not the fourth) quarter of the year, who live in the South or Midwest, who have a mother whose first language is not English, who were low birth weight babies, who have a physical or learning disability, who did not attend preschool, who changed schools one or more times, who live in large households, who live with a single parent, and who have low household income.

Introduction

Enrollment at the "modal grade" for a child's age is one indicator of successful progress through school. The modal grade is the grade in which most children of a given age are enrolled. For example, in the Fall of each year most 8-year-olds are enrolled in third grade; most 15-year-olds are enrolled in 10th grade. There are many factors that influence the grade in which a child is enrolled. These include parents' decision to have a child enter school late or early and parents' or teachers' decisions to retain a child in grade because of lack of emotional or developmental maturity, excessive absences due to migration or illness, or because a child has not mastered the material in that grade.

In recent years more children appear to be behind the usual grade for their age than previously. This change may be due in part to changes in early education philosophy. For example, ten years ago it was considered to be appropriate to send a child to school at as early an age as possible (CITE). Now the philosophy appears to dictate waiting until a child is mature enough for academic work, even allowing a child to wait a year to benefit from being older than his or her classmates. This change in philosophy is reflected in three ways.

First, children may be older when they start school because of parental or school decisions to delay entry. More children are observed by early childhood educators prior to kindergarten entry now than in the past: Between 1964 and 1990, the percentage of 3- and 4-year-olds enrolled in nursery school, pre-kindergarten, or day care centers with an educational program increased from 10 to 44 percent (Kominski and Adams, 1992: table A-2). This leads to earlier assessment and may result ~~to~~ in more frequent professional recommendations that a child is not ready to begin regular school and should delay entry

into kindergarten.

Second, partially as a consequence of changes in philosophy in early education, States and school districts have responded by moving the month by which a child must have reached age 6 (for first grade) and/or age 5 (for kindergarten) one or more months. According to the Education Commission of the States (1979; 1992), only 9 States had a birth month cutoff for school entry that was prior to October 1 in 1979. By 1992, 19 States had a cutoff prior to October 1.

Third, elementary school personnel and parents of children in the early years of school may be more observant of a child's level of maturity and may be more likely to believe it appropriate to have the child repeat kindergarten or first grade in order to achieve better long term school outcomes. The creation of more "transitional" kindergartens and first grades suggests such a change.

Progress through school has been tracked for many years using data from the Bureau of the Census' Current Population Survey (CPS). The CPS collects information about a person's current grade of enrollment and age in October of each year. This information has been used to calculate the percentage of children enrolled below the modal grade for a given age. In 1979, according to data collected in the CPS, 13.1 percent of all 6-, 7-, and 8-year-olds were below the modal grade for their age (Kominski and Adams, 1992); by 1991, this figure had increased by 8 percentage points (to 21.3 percent). Some of this apparent increase in numbers of children behind in grade is probably due to the changes instituted by several States and school districts in the month by which a child must have turned 5 (or

6) for school entry.[1] Parental decisions to delay their child's entry into kindergarten or to have their child spend an extra year in kindergarten may also be increasing the proportion of students who appear to be behind in school.

Recently, new data have become available which allow researchers to assess the prevalence of delayed school entry and repetition of kindergarten and the early grades. In this paper, we use the 1991 National Household Education Survey (NHES) because of its large sample of children 8 years old and under and its focus on many of the current issues surrounding early childhood education, e.g., when to start school, who makes a recommendation to delay entry or retain a student in grade and why, and what types of educational activities do parents do with young children. For this work, we restrict our analysis to children who were enrolled in first or second grade at the time of the survey. All of these children have been exposed to the risk of delayed school entry and kindergarten retention and many have also been exposed to the risk of first grade retention.

The paper has two principal purposes. The first is to examine different ways of measuring whether a child is behind in grade. We use parental reports of whether a child has been delayed in starting kindergarten, retained in kindergarten, or retained in first grade, and construct a CPS-like measure of "below modal grade." Second, we differentiate

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[1] For example, using the CPS data, the result of moving the cutoff month of birth from the first of November, December, or January to the first of August, September, or October is that children with birth months which fall before October (the CPS survey month) but after the new cutoff in their school district appear to be behind the modal grade for their age. In any given State that moved the cutoff month by one month (for example from October 31 to September 30) this change would affect approximately 8 percent of children in the State (or one-twelfth of children born in given a year). Previously these children would have been at modal grade; now they would be counted as below modal grade.

the characteristics of the three subgroups of children -- those for whom a decision was made to delay kindergarten entry, those who repeated kindergarten, and those who repeated first grade -- and compare characteristics to those of children who are below modal grade. In so doing we wish to determine if the CPS-like measure provides reliable information given the changes in educational philosophy and practice described above.

Description of the Data

The data presented in this paper were collected in the 1991 National Household Education Survey (NHES). As its name implies, the NHES is a household survey, unlike other National Center for Education Statistics data collections which tend to be school-based. It was designed to provide data to inform discussion about issues that were poorly addressed through school-based data collections, such as dropping out of school, preprimary education, access to postsecondary education, and adult and continuing education. Currently the survey is scheduled to be fielded annually or biennially and has a roster of scheduled components.

The 1991 survey was the first full-scale NHES. It contained two components: early childhood educational experiences of 3- to 8-year-olds and participation in adult education among persons 16 years old and over. The early childhood education component collected information about childcare and early childhood program experiences, kindergarten and primary school entry, retention in early grades, parental involvement in center-based programs and schools, educational environment in the home, and family background characteristics.

The NHES is a random digit dialing, computer assisted, telephone interview survey. The primary sampling units were the first 8 digits of the 10 digit phone numbers in the United States. Approximately 60,000 screening interviews were conducted in order to obtain the target numbers of completed early childhood and adult education interviews. The target number of early childhood education interviews was 14,000 and interviews were completed for 13,982 of the eligible children. The weighted completion rate was 95 percent. When this completion rate is multiplied by the screener completion rate, the overall weighted response rate for the early childhood component was 77 percent.

For this analysis, we analyze the subset of children who were enrolled in first or second grade at the time of the survey in early 1991. This subsample of 4,668 children, when weighted to population controls, represents approximately 7.5 million first and second grade students in the United States in 1991.

Measurement, Methods, and Models

Using month of birth, we assigned each first and second grader in the 1991 HHES survey an age as of October 1, 1990 and determined which children were enrolled in a grade below that which might be expected given their age as of October. Table 1 shows that about 20 percent of the first and second graders in the 1991 NHES would be classified as below modal grade, a percentage similar to the 21 percent of 6 to 8 year olds classified as below modal grade in the October 1991 CPS school enrollment supplement.

According to parental reports, 16 percent of first and second graders might be classified as behind in school because of delayed entry or grade retention: about 5 percent

of children had entered kindergarten late, 6 percent had repeated kindergarten, and 5 percent had repeated first grade. Very few (less than one percent) had experienced more than one of these events. That is, a child who is delayed in entering kindergarten does not typically repeat kindergarten or first grade. And a child who has either entered kindergarten at an older age or been retained in kindergarten does not often repeat first grade.

Parental responses to direct questions on grade repeating and delayed kindergarten entry should provide a more accurate indication of school progress than the modal grade proxy that has been used when direct information is not available. Of particular interest, then, is the cross-classification of the modal grade measure with the parental reports of delayed entry and retention. According to table 1, 94 percent of children classified as at or above modal grade might be considered correctly classified. That is, they have neither repeated a grade nor were they delayed in entering kindergarten.[2] Among children classified as below modal grade, however, 42 percent had experienced no delay in entry or grade retention according to parental reports and, hence, might be considered misclassified.

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[2] Most of misclassified 6 percent are reported to have either delayed entry into kindergarten or repeated kindergarten. These would typically be children who have a birthday in the fourth quarter of the year and reside in states with relatively late age-cutoffs for school entry. For example, a child with a birthday in early December who resides in a state in which a child could enter kindergarten if he or she turned 5 on or before December 31 might well wait to enter kindergarten during the following year in which he or she turned 6. A parent might report that the child's entry into kindergarten had been delayed but a survey conducted in October, like the CPS, would find a 5 year old child enrolled in kindergarten and the child would not be classified as below modal grade. Similarly, if the child entered kindergarten in the year he or she turned 5 but spent an additional year in kindergarten, the child would not appear to be below modal grade in October of either school year.

This suggests that the modal grade measure may be too inclusive and may or may not provide meaningful information.

To investigate predictors of delayed school entry and grade retention in kindergarten and first grade and to further elaborate whether the below modal grade measure provides an adequate proxy for school progress, we turn to a multivariate investigation of factors which predict which children are "behind" in school. Four dichotomous dependent variables are examined: whether the child's entry into kindergarten was delayed (DELAYK), whether the child spent more than one year in kindergarten (REPEATK), whether the child repeated first grade (REPEAT1), and whether the child's age as of October 1 and current grade results in classification as below modal grade (CPSMODAL).

Logistic regression models are estimated in which demographic characteristics, health and other conditions which might potentially handicap a child's progress through school, region, aspects of the child's current or past school experiences, family composition, and family socioeconomic characteristics are included as predictors. Table 2 provides the coding and means for the predictor variables.

Demographic characteristics include whether the child is a boy, whether the child is black, hispanic, or other than white, black, or Hispanic (with white children forming the omitted category). Quarter of birth is included with birth during the first quarter of the year as the reference category.

Variables indicating whether the child's mother's first language is other than English, whether the child was a "low birth weight" baby, whether the child has a physical handicap or learning disability, and whether the child's mother was a teenager at the birth of her first

child are included as possible conditions which might affect school progress and functioning.

Because parts of the country may vary in school entry cut-off dates and retention practices, variables indicating residence in the Midwest, South, and West are included (with Northeast the omitted category). We would have liked to have included an indicator for central city residence but the NHES survey only ascertained whether a child resided within a metropolitan area or not. Bivariate cross-tabulations indicated little difference on the school progress measures by whether residence was in or outside metropolitan areas so we did not include this predictor in the models estimated.

School related variables included in the models are: whether the child attends a private school, whether the kindergarten attended was full day (a variable related to kindergarten outcomes in a preliminary cross-tabular assessment of the NHES data by Collins (1991)), whether the child had any educational experience prior to entering kindergarten in either nursery schools, day care centers, or pre-kindergarten settings, and whether the child had changed schools one or more times since entering kindergarten.

Several family compositional variables available in the NHES data are included. The survey ascertained whether there were siblings in the household and whether relatives such as grandparents were present and these are included in the model. No questions on birth order of the child or number of siblings were asked but number of persons in the household is included as a proxy for family size. Children were classified by the number of parents present and the employment status of their mother. A set of family type variables are included with children living with two parents and a mother who is not employed the omitted category.

Finally, indicators of the socioeconomic status of the child's family include parental education and total household income. The highest level of education achieved by a child's parent(s) was used to form a set of parental education predictors with children with a high school educated parent the omitted category. In households with two parents, the education of the parent who had the higher level of educational attainment was used. Household income was collected by having the respondent select one of 10 categories with the lowest income category of 1 assigned to income of "$5,000 or less" and the highest, 10, to income "Over $75,000."

The regression results are displayed in table 3 along with an indication of the significance level associated with statistically significant predictors. Standard errors generated by the SAS procedure, PROC LOGIST, were inflated by the square root of the average design effect (1.3) for the survey, that is inflated by a factor of 1.14. These survey design adjusted standard errors are reported in appendix table 1 and were used in determining the significance levels reported in table 3.

Findings

Who delays entry into kindergarten? Boys are more likely than girls to have their entry into kindergarten delayed. Black children are less likely than white children, other things equal, to experience delayed entry into kindergarten. The odds that parents will decide to delay school entry of a child born during the third and fourth quarter of the year are much higher than for a child born during the first quarter of the year. Delayed

kindergarten entry is significantly more likely in the Midwest than the Northeast whereas other regions do not differ significantly from the Northeast (the reference category in the regression). Finally, although there is sometimes the perception that delayed kindergarten entry is especially prevalent among children of highly educated parents (see Collins (1991) for bivariate results from the 1991 NHES data suggesting this to be the case), results in table 3 suggest only that parents without a high school education may be less likely to delay school entry of their children than parents who are high school graduates. Parents with college and post-graduate educations do not differ significantly from parents with only a high school education in the likelihood that they will delay entry of their child into kindergarten.

Who repeats kindergarten? As with delayed entry, boys are more likely to repeat kindergarten than are girls. Children born during the third quarter of the year, and perhaps also those born during the fourth quarter of the year, are more likely than children born during the first quarter of the year to spend more than one year in kindergarten. Children with a physical or learning disability are more likely to repeat kindergarten than children without such difficulties.

Whereas delayed kindergarten entry seems to be a phenomena more prevalent in the Midwest than other regions of the country, spending more than one year in kindergarten appears to be more often practiced in the South and West than elsewhere. (The South and West differ significantly from the Northeast, the reference category, and the Midwest does not differ significantly from the Northeast.)

Several aspects of prior school experiences of the child appear to be related to repeating kindergarten. If the kindergarten the child attended was a full-day program, the

child is somewhat more likely to have spent a second year in the program. School experience prior to kindergarten diminishes the chances that a child will repeat kindergarten. Finally, if a child has changed schools since entering kindergarten, he or she is more likely to have spent two years in kindergarten. Here, the causal direction is particularly unclear, however. A child deemed to require an additional year in kindergarten may change schools so as not to spend the second year in the same school where he or she spent the first year. Hence, the usual interpretation of a mobility effect -- that moving impedes school progress and functioning (Bianchi, 1993; Haveman, Wolfe, and Spaulding, 1991; Straits, 1987; Long, 1975) -- may or may not be applicable to the findings here.

As with the DELAYK regression, none of the family compositional factors significantly influence retention in kindergarten. The socioeconomic effects are somewhat different from the delayed entry results, however. Children of parents who have at least some education beyond high school are less likely to repeat kindergarten than children of parents with a high school education. Children of parents who are not high school graduates do not differ significantly from those with a parent who has a high school education.

Who repeats first grade? Just as boys are more likely than girls to start kindergarten at a later age and repeat kindergarten, so too are they more likely to be retained in first grade. Black children are also significantly more likely than white children to repeat first grade. Children living in the West are significantly less likely than children in the Northeast to repeat first grade and children in the other two regions do not differ significantly from those in the Northeast.

As with retention in kindergarten, school experience prior to kindergarten lessens the odds that a child will repeat first grade. Changing schools one or more times is associated with an increased likelihood that a child repeats first grade but the caveat about causal direction in the interpretation of this effect applies here as well.

Whereas there were no significant associations between family compositional variables and delayed entry or retention in kindergarten, the likelihood of repeating first grade is higher among children living with one parent and a step-parent than for children in two-parent families in which both are biological or adoptive parents. Family socioeconomic factors are also predictive of first grade retention. The higher the household income the lower the odds of repeating first grade. Children with parents who are college graduates or have education beyond college are less likely to repeat first grade than children of parents with only a high school education. Conversely, the odds of repeating first grade are higher for children of parents who have not completed high school than for children of high school graduates.

Who is below modal grade? As shown in table 1, children identified as below modal grade include children who have entered kindergarten late (17 percent of those below mode), repeated kindergarten (18 percent), and repeated first grade (21 percent). In addition, 42 percent of those identified as below modal grade have neither delayed entry into school nor repeated kindergarten or first grade. Given this, what emerges when we predict enrollment below modal grade (CPSMODAL) with the same set of variables used in the equations to predict DELAYK, REPEATK, and REPEAT1? If CPSMODAL were our only measure of school progress, we would conclude the following.

Boys are more likely than girls to be behind in school. This is accurate and not surprising given that boys are found to have a greater likelihood of delayed entry into school and grade retention. However, we would also conclude that black children in first and second grade are less likely to be behind in school than white children, other things equal. This "finding" is somewhat misleading given the results of the other regressions which suggest that black children are less likely than white children to delay kindergarten entry, no different in terms of the likelihood of repeating kindergarten, but significantly more likely to repeat first grade.

The CPSMODAL regression suggests that children born in the third quarter of the year are more likely to be behind in school relative to children born in the first quarter of the year. This result reflects the fact that children born in the third quarter more often delay entry or repeat kindergarten. They do not more often repeat first grade.

In the CPSMODAL regression, having a mother whose first language is other than English is associated with a decreased likelihood of being below modal grade, a finding that is difficult to explain and is not found in the other regressions.[3] Low birth weight and a physical or learning problem increase the odds that a child is enrolled below modal grade. These effects capture the significance of low birth weight in the DELAYK regression and of the physical/learning problem in the REPEATK regression.

If one were to rely solely on the modal grade specification, one might conclude that children in the South and Midwest are more likely to be behind in school than children in

[3] The sign of the coefficient in the REPEAT1 equation is also negative but the coefficient fails to achieve statistical significance.

the Northeast and that children in the West do not differ from children in the Northeast. However, children in the West may actually be more likely to repeat kindergarten and less likely to repeat first grade than children in the Northeast. These effects cancel each other out in the CPSMODAL specification.

Preschool educational experience lessens the likelihood that a child is below modal grade and changing schools is associated with an increased likelihood that a child is below modal grade. These results parallel findings from the REPEATK and REPEAT1 models.

Two family compositional factors emerge in the CPSMODAL model as associated with a child's likelihood of being classified as below modal grade. The larger the number of persons in the household the greater the likelihood a child is behind in school. And children living with only one parent are more likely than children with two parents to be enrolled below the grade modal for their age. The finding of more enrollment below modal grade among children in single-parent families is consistent with findings from other surveys (Bianchi, 1993) but is not an effect that is present in either the DELAYK, REPEATK, or REPEAT1 models.

Finally, parental education is not a significant predictor of a child being enrolled below modal grade although household income is associated with the likelihood that a child is behind in school (as was the case with the REPEAT1 regression). Because the role of parental education varies across the processes of delayed entry to kindergarten and grade retention in kindergarten and first grade, and perhaps also because a sizable percentage of children classified as below modal grade have not in fact experienced delayed entry or grade retention, the parental education effects do not appear in the CPSMODAL regression.

Conclusion

The foregoing offers a profile of children who delay entry into kindergarten, repeat kindergarten, or repeat first grade and suggests how these groups of children differ from each other. It also provides a cautionary note for analyses in which delayed entry cannot be distinguished from grade retention and/or all that is available is a proxy for children's school progress, such as enrollment below modal grade.

In particular, conclusions about the influence of race, parental education, and regional differences are problematic in the modal grade analysis in this paper. Other things equal, black children are less likely than white children to be enrolled below modal grade in the NHES. This would be an important finding were it true. However, other findings in the paper suggest that black children less often are given "extra time" before entering kindergarten than white children. Conversely, or perhaps as a result, they more often repeat first grade than white children. Which of these effects dominates in a regression which is unable to separate the two processes of delayed school entry and grade retention determines the race effect.

With regard to parental education, the modal grade analysis suggests that parental education has no predictive association with school progress. However, results from the other models imply that parental education is an important factor in children's progress through school. Children of poorly educated parents may be less likely to receive "extra time" before entering kindergarten and they are more likely than children of better educated parents to repeat first grade. Having a college educated parent reduces the likelihood of grade retention for children. The effect of parental education washes out in a specification

which cannot separate the processes of delayed school entry and grade retention.

Regional differences emerge in this analysis which warrant further investigation. The Midwest appears to be a region in which the practice of delayed entry into kindergarten is relatively frequent whereas the South and West appear to be regions in which spending more than one year in kindergarten is relatively common. In the West, retention in first grade is less common than in other regions. The modal grade regression captures the Midwest and South effects, though it cannot illuminate that the practice in the Midwest is delayed entry versus kindergarten retention in the South. However, because relatively high kindergarten retention is counterbalanced by relatively low first grade retention in the West, no regional effect for living in the West appears in the modal grade regression.

Finally, the cross-sectional data used in this paper to describe which children enter school late, spend more than one year in kindergarten, or repeat first grade are suggestive rather than definitive. For example, the interrelationship among changing schools and grade retention is interesting in light of findings from other surveys of the harmful effects of mobility for children's educational performance but without further information on the temporal sequence of events, it is not possible to know whether mobility in this case is cause or effect of school difficulty. Similarly, the finding that prekindergarten educational experience reduces the likelihood of grade retention, if replicated in other research, is potentially important for policy makers because it suggests that early education may help children navigate at least the early years of school.

References

Bianchi, S.M. 1993. "Change in the Educational Performance of U.S. Children in the 1980s." Education Analysis Staff Working Paper.

Collins, M. 1991. "Early Childhood Experience of 3- to 8-Year Olds." Report prepared for the U.S. Department of Education, National Center for Education Statistics. Rockville, MD: Westat, Inc.

Education Commission of the States. 1979. "School Entrance Age by State as of 1979." Denver, CO.

Education Commission of the States. 1992. "State Characteristics: Kindergarten." Clearinghouse Notes. Denver, CO.

Haveman, R., B. Wolfe, and J. Spaulding. 1991. "Childhood Events and Circumstances Influencing High School Completion." Demography 28 (February): 133-157.

Kominski, R. and A. Adams. 1992. "School Enrollment -- Social and Economic Characteristics of Students: October 1990," U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 460. Washington, DC: U.S. Government Printing Office.

Long, L.H. 1975. "Does Migration Interfere with Children's Progress in School?" Sociology of Education 48: 369-81.

Strait, B.C. 1987. "Residence, Migration, and School Progress," Sociology of Education 60 (January): 34-43.

Table 1: Parental Report of Delayed Kindergarten Entry and Grade Retention in Kindergarten and First Grade by Whether the Child is Below Modal Grade: 1991 NHES, First and Second Grade Students (Weighted estimates in thousands)

Parental Reports of Delay, Grade Retention	Total	Modal Grade Below	At/Above
Total	7,514	1,502	6,012
Row Percent	100.0	20.0	80.0
Total	100.0	100.0	100.0
No Delay or Retention	83.5	42.2	93.8
Delayed or Repeated	16.4	57.8	6.3
--Delayed Kindergarten Only	5.4	16.9	2.7
--Repeated Kindergarten Only	5.6	17.8	2.6
--Repeated First Grade Only	4.8	21.0	0.7
--Delayed and/or Repeated Kindergarten and/or First	0.6	2.1	0.3

Table 2: Independent Variables in Logistic Regression Analysis

	Mean/Percentage
Demographic	
BOY (1 if male, else 0)	51.9
BLACK (1 if non-Hispanic black, else 0)	14.7
HISPANIC (1 if Hispanic, else 0)	11.6
OTHRACE (1 if other than white, Hispanic or black, else 0)	4.1
QRT2 (1 if born in April, May, or June, else 0)	25.1
QRT3 (1 if born in July, Aug. or Sept., else 0)	26.0
QRT4 (1 if born in Oct., Nov. Dec., else 0)	25.1
Health/Handicap	
ESL (1 if mother's first language other than English, else 0)	11.4
LOWEIGHT (1 if weighed 5.5 pounds or less at birth, else 0)	6.1
PROBLEM (1 if physical or learning disability, else 0)	6.6
TEENMOM (1 if mother a teenager at birth of first child, else 0)	26.8
Geographic	
MIDWEST (1 if Midwest, else 0)	25.4
SOUTH (1 if South, else 0)	34.1
WEST (1 if West, else 0)	20.9
School	
PRIVATE (1 if attends private school, else 0)	10.6
FULLDAYK (1 if kindergarten was full day, else 0)	39.9
PREK (1 if attended educational program before kindergarten, else 0)	62.8
MOVESCH1 (1 if changed schools once, else 0)	26.1
MOVESCH2 (1 if changed schools two or more times, else 0)	9.3
Family Composition	
SIBLINGS (1 if siblings in household, else 0)	85.9
EXTENDED (1 if grandparents, other relatives in household, else 0)	11.1
NUMPERS (number of persons in child's household)	4.5
TWOFULL (1 if two parents, mother works full-time, else 0)	23.9
TWOPART (1 if two parents, mother works part-time, else 0)	17.7
STEPPRNT (1 if one parent and step-parent, else 0)	6.6
ONEPRNT (1 if one parent, else 0)	23.3
NEITHER (1 if neither parent in household, else 0)	2.6
Socioeconomic	
LESSHS (1 if parent not high school graduate, else 0)	10.7
SOMECOLL (1 if parent has vocational training, some college, else 0)	30.1
COLLEGE (1 if parent is college graduate, else 0)	13.8
POSTGRAD (1 if parent has post-graduate training, else 0)	12.3
INCOME (total household income (10 categories, 1=$5,000 or less, (5=$20,000-25,000, 6=$25,000-30,000, 10=Over $75,000)	5.7

Table 3: Logistic Regression Coefficients for Models Predicting Delayed Kindergarten Entry and Grade Retention Among First and Second Grade Students

	DELAYK		REPEATK		REPEAT1		CPSMODAL	
INTERCEPT	-4.429	***	-3.628	***	-3.021	***	-2.730	***
Demographic								
BOY	0.643	***	0.304	**	0.700	***	0.559	***
BLACK	-0.689	**	-0.195		0.546	***	-0.401	***
HISPANIC	-0.150		-0.021		0.408		0.134	
OTHRACE	0.069		-0.121		0.238		-0.069	
QRT2	0.377		0.185		0.111		0.234	*
QRT3	1.486	***	0.564	***	0.000		1.389	***
QRT4	1.018	***	0.365	*	-0.239		-0.585	***
Health/Handicap								
ESL	0.156		0.197		-0.430		-0.613	***
LOWEIGHT	0.718	***	-0.089		0.057		0.453	**
PROBLEM	0.372		1.041	***	0.160		0.750	***
TEENMOM	-0.249		-0.265		0.209		-0.033	
Geographic								
MIDWEST	0.615	***	0.020		-0.186		0.544	***
SOUTH	-0.267		0.447	**	-0.114		0.500	***
WEST	0.213		0.612	**	-0.600	**	-0.116	
School								
PRIVATE	0.185		0.216		-0.230		-0.070	
FULLDAYK	-0.090		0.301	*	0.255		0.003	
PREK	-0.011		-0.422	***	-0.698	***	-0.208	**
MOVESCH1	0.030		0.577	***	0.444	**	0.238	**
MOVESCH2	-0.471		1.193	***	1.303	***	0.891	***
Family Composition								
SIBLINGS	-0.189		-0.135		0.172		0.065	
EXTENDED	-0.580		0.126		0.192		0.087	
NUMPERS	0.041		0.045		-0.052		0.088	**
TWOFULL	-0.163		0.268		0.313		0.100	
TWOPART	0.051		0.047		0.018		-0.071	
STEPPRNT	-0.076		0.123		0.785	***	0.169	
ONEPRNT	-0.053		0.248		0.217		0.322	**
NEITHER	-1.834		-0.044		-0.006		0.411	
Socioeconomic								
LESSHS	-0.711	*	0.241		0.478	**	0.245	
SOMECOLL	0.144		-0.587	***	0.051		-0.042	
COLLEGE	0.345		-0.747	**	-0.740	**	-0.101	
POSTGRAD	0.388		-0.510	*	-1.420	**	-0.035	
INCOME	0.043		-0.027		-0.074	**	-0.054	**

*** p<.01, ** p<.05, * p<.10

Appendix Table 1: Standard Errors of Logistic Regression Coefficients for Models Predicting Delayed Kindergarten Entry and Grade Retention Among First and Second Grade Students

	DELAYK	REPEATK	REPEAT1	CPSMODAL
INTERCEPT	0.524	0.452	0.463	0.293
Demographic				
BOY	0.155	0.146	0.161	0.093
BLACK	0.331	0.224	0.206	0.143
HISPANIC	0.320	0.255	0.272	0.180
OTHRACE	0.381	0.381	0.448	0.266
QRT2	0.281	0.222	0.216	0.137
QRT3	0.246	0.210	0.214	0.125
QRT4	0.256	0.217	0.228	0.157
Health/Handicap				
ESL	0.303	0.257	0.302	0.196
LOWEIGHT	0.265	0.288	0.300	0.176
PROBLEM	0.271	0.210	0.272	0.160
TEENMOM	0.216	0.173	0.171	0.112
Geographic				
MIDWEST	0.212	0.255	0.237	0.142
SOUTH	0.242	0.226	0.218	0.139
WEST	0.236	0.243	0.276	0.162
School				
PRIVATE	0.216	0.258	0.347	0.162
FULLDAYK	0.172	0.160	0.169	0.103
PREK	0.164	0.151	0.161	0.098
MOVESCH1	0.173	0.163	0.180	0.106
MOVESCH2	0.332	0.195	0.199	0.141
Family Composition				
SIBLINGS	0.253	0.216	0.240	0.149
EXTENDED	0.373	0.225	0.240	0.157
NUMPERS	0.071	0.056	0.063	0.038
TWOFULL	0.207	0.214	0.246	0.134
TWOPART	0.206	0.251	0.305	0.150
STEPPRNT	0.339	0.311	0.290	0.198
ONEPRNT	0.262	0.220	0.235	0.144
NEITHER	1.389	0.451	0.480	0.296
Socioeconomic				
LESSHS	0.424	0.214	0.219	0.158
SOMECOLL	0.200	0.193	0.190	0.117
COLLEGE	0.239	0.295	0.374	0.165
POSTGRAD	0.254	0.291	0.561	0.178
INCOME	0.036	0.033	0.036	0.021

Standard errors have been inflated by a factor of 1.14, the square root of the average design effect (1.3) for the survey.